

What is claimed is:

1. A radiation source module for use in a fluid treatment system, the module comprising:
a substantially elongate first support member having a longitudinal first axis; and
a first pair of radiation source assemblies extending from the first support member, each radiation source assembly comprising a radiation source;
wherein the first pair of radiation source assemblies is oriented such that a second axis extending through a center point of each radiation source assembly is disposed at an angle with respect to the first axis.
2. The radiation source module defined in claim 1, wherein the angle is about 90°.
3. The radiation source module defined in claim 1, wherein the angle is an acute angle.
4. The radiation source module defined in claim 1, wherein a plurality of pairs of radiation source assemblies extend from the first support member.
5. The radiation source module defined in claim 1, wherein the radiation source assemblies are cantilevered from the first support member.
6. The radiation source module defined in claim 1, wherein the radiation source assemblies are cantilevered from the first support member in a non-perpendicular manner.
7. The radiation source module defined in claim 1, further comprising a substantially elongate second support member spaced from the first support member, the radiation source assemblies being supported by both the first support member and the second support member.

8. The radiation source module defined in claim 1, wherein the radiation source assemblies each comprise at least one radiation source disposed with a protective sleeve.

9. The radiation source module defined in claim 8, wherein the protective sleeve comprises a quartz sleeve.

10. The radiation source module defined in claim 1, further comprising a first elongate connector between the first support member and a first radiation source assembly, and a second elongate connector between the first support member and a second radiation source assembly.

11. The radiation source module defined in claim 10, wherein the first elongate connector and the second elongate connector are in a substantially non-parallel relationship with respect to one another.

12. The radiation source module defined in claim 11, wherein the first elongate connector and the second elongate connector are of substantially the same length.

13. The radiation source module defined in claim 11, wherein the first elongate connector and the second elongate connector are of a different length.

14. The radiation source module defined in claim 1, wherein the first radiation source assembly and the second radiation source assembly are in a substantially parallel relationship with respect to one another.

15. The radiation source module defined in claim 1, further comprising a cleaning system for removing fouling materials from an exterior of the radiation source assemblies.

16. The radiation source module defined in claim 15, wherein the cleaning system comprises: (i) a cleaning ring for engagement with a portion of the exterior of the

radiation source assemblies, and (ii) motive means to translate the slidable member over the exterior of the radiation source assembly.

17. The cleaning apparatus defined in claim 16, wherein the cleaning ring comprises a chamber for surrounding a portion of the exterior of the radiation source assembly.

18. The cleaning apparatus defined in claim 17, wherein the cleaning ring further comprises an inlet for introduction of a cleaning solution to the chamber.

19. The radiation source module defined in claim 16, wherein a single motive means is provided for at least two radiation source assemblies.

20. The radiation source module defined in claim 16, wherein at least two pairs of radiation source assemblies extend from the first support member.

21. The radiation source module defined in claim 20, wherein at least two pairs of radiation source assemblies extend from the first support member, and single motive means is provide for each quartet of radiation source assemblies.

22. The radiation source module defined in claim 1; further comprising a power supply for the radiation source assemblies.

23. The radiation source module defined in claim 22, wherein the power supply is disposed in a housing attached to the first support member.

24. The radiation source module defined in claim 22, wherein the power supply is disposed in the first support member.

25. A radiation source module for use in a fluid treatment system, the module comprising:

a substantially elongate first support member having a longitudinal first axis; and

law
a first column of radiation source assemblies extending from the first support member, and a second column of radiation source assemblies extending from the first support member, each radiation source assembly comprising a radiation source; the first column of radiation source assemblies and the second column of radiation source assemblies disposed adjacent one another.

26. The radiation source module defined in claim 25, wherein the first column of radiation source assemblies and the second column of radiation source assemblies are disposed in a substantially staggered relationship with respect to one another.

27. The radiation source module defined in claim 25, wherein the first column of radiation source assemblies and the second column of radiation source assemblies are disposed in a substantially non-staggered relationship with respect to one another.

28. The radiation source module defined in claim 25, wherein the radiation source assemblies are cantilevered from the first support member.

29. The radiation source module defined in claim 25, further comprising a substantially elongate second support member spaced from the first support member, the radiation source assemblies being supported by both the first support member and the second support member.

30. The radiation source module defined in claim 25, wherein the radiation source assemblies each comprise at least one radiation source disposed with a protective sleeve.

31. The radiation source module defined in claim 30, wherein the protective sleeve comprises a quartz sleeve.

32. The radiation source module defined in claim 25, further comprising a first elongate connector between the first support member and a first radiation source

assembly, and a second elongate connector between the first support member and a second radiation source assembly.

33. The radiation source module defined in claim 32, wherein the first elongate connector and the second elongate connector are in a substantially non-parallel relationship with respect to one another.

34. The radiation source module defined in claim 25, wherein the first radiation source assembly and the second radiation source assembly are in a substantially parallel relationship with respect to one another.

35. The radiation source module defined in claim 25, further comprising a cleaning system for removing fouling materials from an exterior of the radiation source assemblies.

36. The radiation source module defined in claim 35, wherein the cleaning system comprises: (i) a cleaning ring for engagement with a portion of the exterior of the radiation source assemblies, and (ii) motive means to translate the slidable member over the exterior of the radiation source assembly.

37. The cleaning apparatus defined in claim 36, wherein the cleaning ring comprises a chamber for surrounding a portion of the exterior of the radiation source assembly.

38. The cleaning apparatus defined in claim 37, wherein the cleaning ring further comprises an inlet for introduction of a cleaning solution to the chamber.

39. The radiation source module defined in claim 36, wherein a single motive means is provided for at least two radiation source assemblies.

40. The radiation source module defined in claim 36, wherein at least two pairs of radiation source assemblies extend from the first support member.

41. The radiation source module defined in claim 40, wherein at least two pairs of radiation source assemblies extend from the first support member, and single motive means is provided at least for each quartet of radiation source assemblies.

42. The radiation source module defined in claim 25, further comprising a power supply for the radiation source assemblies.

43. The radiation source module defined in claim 42, wherein the power supply is disposed in a housing attached to the first support member.

44. The radiation source module defined in claim 42, wherein the power supply is disposed in the first support member.

45. A fluid treatment device comprising at least one radiation source module as defined in claim 1.

46. A fluid treatment device comprising at least one radiation source module as defined in claim 25.